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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/671,602	09/29/2003	Yoon Gon Kim	1594.1250	8536

21171 7590 08/19/2005

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EXAMINER	
LEUNG, PHILIP H	
ART UNIT	**PAPER NUMBER**
3742	

DATE MAILED: 08/19/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/671,602	KIM, YOON GON	
	Examiner	Art Unit	
	Philip H. Leung	3742	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *03 June 2005*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-7,9-19 and 21-30* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-7, 9-19 and 21-30* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. Claims 1-4, 6, 7, 9, 13-16, 18, 19, 21, 25-28 and 30 are rejected under 35 U.S.C. 103(a) as being obvious over Hishiyama (JP 1-305231), in view of Yang et al (US 5,990,467) or Shin (US 6,005,235) and Ikeda (JP 62-297634) (all previously cited).

Hishiyama shows a microwave oven comprising a cabinet partitioned into a microwave cooking cavity 12, a toasting cavity 11, and a machine room; a microwave generating unit installed in the machine room to generate microwaves into the microwave cooking cavity; a heating unit installed in the toasting cavity to heat the toasting cavity. It also shows a ventilating unit 17 for cooling the electrical components in the machine room (see Figure 1 and the English abstract). Although it does not explicitly identity the electrical components in the electrical machine room, it is well known to an ordinary skill in the art that a microwave oven requires a high voltage transformer and a high voltage condenser for applying a high voltage to the magnetron in order to generate a microwave radiation in the oven chamber. Anyway, Yang shows a microwave oven with a heating chamber 10a and a machine room 10b having essential electrical components therein. The electrical components including a magnetron 14, a high voltage transformer 15 and a high voltage condenser 16 are cooled by a fan 20 (see Figure 2 and 2, lines 41-62). Shin also shows a microwave oven having a cooking chamber and a machine

chamber 8 housing electrical components for generating microwave including a magnetron and a high voltage transformer and not shown but inherently, a condenser and a fan 24 for cooling the same. It also shows the use of separate fans 20, 22 for cooling other heaters 10 and 12 located above and below the heating chamber (see Figure 1 and col. 3, lines 6-35). It would have been obvious to one ordinary skill in the art to modify Hishiyama to use the cooling fan to cool the essential electrical components including the high voltage transformer and condenser and the magnetron to prevent the same from overheating, in view of the teaching of Yang or Shin. Therefore Hishiyama combined with Yang or Shin shows every feature as claimed except for the use of the ventilation unit for venting the toasting cavity. Ikeda shows a microwave oven comprising: a microwave generating unit 4 located in a first cavity (not shown but all microwave ovens inherently include an outer casing covering the machine room and the heating chamber) to generate microwaves into a second cavity (the lower part of the heating chamber 1 which is partitioned into upper and lower parts) adjacent to the first cavity; at least one heating unit 2 located in a third cavity (the upper part) proximate to the second cavity; and a ventilating unit 3 to ventilate the third cavity (toasting cavity) (see Figures 1 and 2 and the English abstract). It would have been obvious to an ordinary skill in the art at the time of invention to modify Hishiyama to use a separate ventilating fan to provide air into the toasting cavity in addition to the cooling fan for the electrical components in the machine room, for better heating efficiency and better toasting result, in view of the teaching of Yang or Shin combined with Ikeda.

3. Claims 5, 10-12, 17, 22-24 and 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hishiyama (JP 1-305231), in view of Yang et al (US 5,990,467) or Shin (US 6,005,235) and Ikeda (JP 62-297634), as applied to claims 1-4, 6, 7, 9, 13-16, 18, 19, 21, 25-28 and 30 above, and further in view of Nitta (JP 55-110835) or Yoshikawa (JP 4-148115) (both previously cited).

As set forth above, Hishiyama combined with Yang or Shin and Ikeda shows every feature as claimed except for the use of a deodorizing filter. Nitta shows that it is well known in the art to use a filter 11, 12 in the cooking chamber 3 for removing smoke and smell generated from the cooking (see Figures1 and 2 and the English abstract). Yoshikawa also shows the use of a deodorizing filter for purification of the cooking chamber of a microwave oven (see Figures 1 and 2 and the English abstract). It would have been obvious to an ordinary skill in the art at the time of invention to modify Hishiyama combined with Yang or Shin and Ikeda to use a deodorizing filter for removing smell and purifying the cooking air of the microwave oven, in view of the teaching of Nitta or Yoshikawa.

4. Applicant's arguments filed 6-3-2005 have been fully considered but they are not persuasive. It is clear that Hishiyama teaches the basic claimed invention having a microwave chamber 12 and a toasting cavity 11 and a machine room having a cooling fan. The use of a high transformer and a condenser for the microwave power generation is routine and essential in the art of microwave ovens as shown by Yang or Shin. The use of airflow through the toasting compartment for better heating efficiency and heating result is taught by Ikeda. The argument that Ikeda does not recite a microwave oven is not well taken as element 4 In Figure 1 is clearly a

microwave generator. (Note: the examiner understands some Japanese. However, a formal English translation will be sought upon request by the applicant). Furthermore, Shin shows the use of separate fans 20, 22 and 24 for cooling different elements in order to achieve better cooling effect. Therefore, to use a single or two fans would have been a mere engineering expediency depending on the amount of cooling needed and is a matter of cost tradeoff. The use of a deodorizing filter in a microwave oven is clearly taught by Nitta (again, element 4 in Figure 1 is a microwave generator) or Yoshikawa. To add this feature to any microwave oven in order to reduce odor from the oven chamber would have been clearly within an ordinary skill in the art in view of the explicit showing of these references.

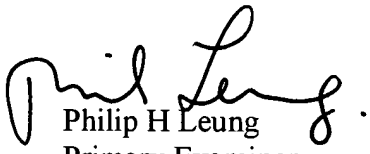
5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Philip H Leung whose telephone number is (571) 272-4782. The examiner can normally be reached on flexible.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Robin Evans can be reached on (571) 272-4777. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Philip H Leung
Primary Examiner
Art Unit 3742

P.Leung/pl
8-14-2005